ELECTROLYTIC DETECTOR

World of Wireless

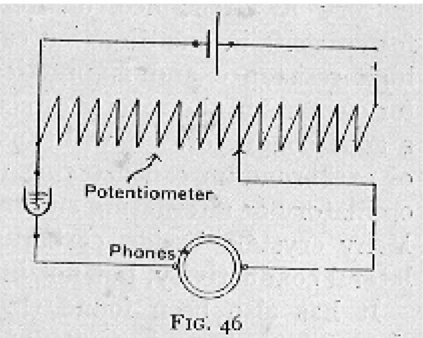

FIG. 46
Electrolytic detector

This detector consists of a platinum cup containing a solution of dilute acid. The cup forms one electrode and the other consists of a wollaston wire sealed into a glass tube, which is drawn out very fine and then broken off, leaving only the cross-section of the wollaston wire exposed. Connection is made to the wire by means of the metal tube in which the electrode is mounted. The detector with high-resistance phones in series with it is tapped across two points of a potentiometer which has a battery across its terminals. The small current which passes through the detector polarises it-that is to say , gas is formed at the electrodes and the resistance thereby matarially increased. If now the arrangement be subjected to the small alternations of potential and current set up in a receiving circuit by the impact of electrical oscillations it will be depolarised, and the resistance of the electrolytic cell falling, a small current will pass through the phones and will be audible to the operator; after the arrival of each wave train the battery again polarises the cell, the device being thus self-restoring. To adjust the cell, the small electrode having been inserted in the holder and its point dipping into the electrolyte, the arm of the potentiometer is moved round till a hissing noise is heard in the phones, it is then moved back until the noise just ceases. The detector is then in its most sensitive condition.

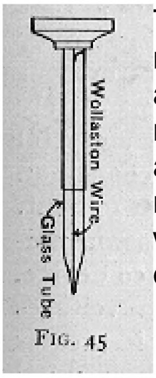

FIG. 45

This form of detector is in extensive use, and is very sensitive and reliable; it has been found, however, that atmospheric disturbances, if at all strong, render the device insensitive, but not permanently so, as it restores itself in the course of a few seconds. The restoration may be accelerated by momentarily increasing the voltage across its terminals by moving the arm of the potentiometer round a little. (fig.45) shows the wollaston wire electrode and (fig.46) the method of connecting the detector with battery and potentiometer.

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